IN THE CLAIMS:

Please amend the pending claims as follows, substituting any amended claim(s) for the corresponding pending claim(s):

1   1.   (Unchanged)   An apparatus for generating a hybrid speech model associated to a given

2   speech element, said hybrid speech model being suitable for use by a speech recognition device

3   during speech recognition, said apparatus comprising:

4   -   an input for receiving an input signal derived from a spoken utterance that contains

5   at least one speech element that potentially matches the given speech element;

6   -   a model group associated to the given speech element, said model group comprising

7   a plurality of speech models, each speech model of said plurality of speech models

8   being a different representation of the given speech element;

9   -   a processing unit coupled to the input for processing the input signal and the model

10   group to generate a hybrid speech model associated to the given speech element, said

11   hybrid speech model being a combination of speech models in said plurality of

12   speech models on the basis of the input signal derived from the spoken utterance;

13   -   an output for releasing a signal indicative of said hybrid speech model associated to

14   the given speech element in a format suitable for use by a speech recognition device.

1   2.   (Unchanged)   An apparatus as defined in claim 1, wherein the given speech element is an

2   element selected from the group consisting of phones, diphones, syllables and words.

1   3.   (Unchanged)   An apparatus as defined in claim 2, wherein said input signal derived from

2   a spoken utterance is indicative of a speaker specific speech model associated to the at least one

3   speech element.

1   4.   (Unchanged)   An apparatus as defined in claim 3, wherein said hybrid speech model is

2   weighted toward the speaker specific speech model.

1   5.   (Unchanged)   An apparatus as defined in claim 4, wherein said hybrid speech model is

2   derived by computing a linear combination of the speech models in said model group.

1   6.   (Unchanged)   An apparatus as defined in claim 5, wherein said input is a first input and

2   wherein said input signal is a first input signal, said apparatus further comprising:

3   a)   a second input for receiving a second input signal conveying a data element

4   identifying the given speech element;

5   b)   a database of model groups comprising a plurality of model groups, each model group

6   being associated to a respective speech element, each model group comprising a set of speech

7   models;

8   said processing unit being further operative for extracting from said database of model groups

9   a certain model group associated to the data element received at said second input identifying the

10   given speech element.

1   7.   (Unchanged)   A method for generating a hybrid speech model associated to a given speech

2   element, said hybrid speech model being suitable for use by a speech recognition device during

3   speech recognition, said method comprising:

4   -   receiving an input signal derived from a spoken utterance that contains at least one

5   speech element that potentially matches the given speech element;

6   -   providing a model group associated to the given speech element, said model group

7   comprising a plurality of speech models, each speech model of said plurality of

8   speech models being a different representation of the given speech element;

9   -   processing the input signal and the model group to generate a hybrid speech model

10   associated to the given speech element, said hybrid speech model being a

11   combination of speech models in said plurality of speech models on the basis of the

12   input signal derived from the spoken utterance;

13   -   releasing a signal indicative of said hybrid speech model associated to the given

14   speech element in a format suitable for use by a speech recognition device.

1   8.   (Unchanged)   A computer readable medium comprising a program element suitable for

2   execution by a computing apparatus for generating a hybrid speech model associated to a given

3   speech element, said hybrid speech model being suitable for use by a speech recognition device

4   during speech recognition, said computing apparatus comprising:

5   -   a memory unit for storing a model group associated to the given speech element, said

6   model group comprising a plurality of speech models, each speech model of said

7   plurality of speech models being a different representation of the given speech

8   element;

9   -   a processor operatively connected to said memory unit, said program element when

10   executing on said processor being operative for implementing:

11   -   an input for receiving an input signal derived from a spoken utterance that

12   contains at least one speech element that potentially matches the given speech

13   element;

14   -   a processing unit coupled to the input for processing the input signal and the

15   model group to generate a hybrid speech model associated to the given

16   speech element, said hybrid speech model being a combination of speech

17   models in said plurality of speech models on the basis of the input signal

18   derived from the spoken utterance;

19   -   an output for releasing a signal indicative of said hybrid speech model

20   associated to the given speech element in a format suitable for use by a

21   speech recognition device.

1   9.   (Unchanged)   An apparatus for generating a complex speech model associated to a given

2   speech element, said complex speech model being suitable for use by a speech recognition device

3   during speech recognition, said apparatus comprising:

4   -   an input for receiving an input signal derived from a spoken utterance that contains

5   at least one speech element that potentially matches the given speech element;

6   -   a model group associated to the given speech element, said model group comprising

7   a plurality of speech models, each speech model of said plurality of speech models

8   being a different representation of the given speech element, said model group

9   comprising two sets of speech models namely a first set having speech models of a

10   first type and a second set having speech models of a second type, each speech model

11   of a first type in said first set being associated to a speech model of the second type

12   in the second set;

13   -   a processing unit coupled to the input for:

14   a)   processing the input signal and the model group to generate a hybrid speech

15   model associated to the given speech element, said hybrid speech model

16   being a combination of speech models of the first type in said plurality of

17   speech models on the basis of the input signal derived from the spoken

18   utterance;

19   b)   processing the hybrid speech model to generate a complex speech model

20   associated to the given speech element, said complex speech model being a

21   combination of speech models of the second type in said plurality of speech

22   models;

23   -   an output for releasing a signal indicative of said complex speech model associated

24   to the given speech element in a format suitable for use by a speech recognition

25   device.

1   10.   (Unchanged)   An apparatus as defined in claim 9, wherein any speech model of a second

2   type is indicative of a speech model having a higher complexity than a speech model of a first type

3   to which it is associated.

1   11.   (Unchanged)   An apparatus as defined in claim 10, wherein the given speech element is

2   indicative of a data element selected from the set consisting of phones, diphones, syllables and

3   words.

1   12.   (Unchanged) An apparatus as defined in claim 11, wherein said input signal derived from

2   a spoken utterance is indicative of a speaker specific speech model associated to the at least one

3   speech element.

1   13.   (Unchanged) An apparatus as defined in claim 12, wherein said hybrid speech model is

2   weighted toward the speaker specific speech model.

1   14.   (Unchanged) An apparatus as defined in claim 13, wherein said hybrid speech model is

2   derived by computing a linear combination of the speech models of the first type.

1   15.   (Unchanged) An apparatus as defined in claim 14, wherein said linear combination is a first

2   linear combination and is characterized by a first set of parameters indicative of weights associated

3   to speech models of the first type, said complex speech model being derived by computing a second

4   linear combination of the speech models of the second type, said second linear combination being

5   characterized by a second set of parameters indicative of weights associated to speech models of the

6   second type.

1   16.   (Unchanged) An apparatus as defined in claim 15, wherein said first set of parameters and

2   said second set of parameters are indicative of substantially same weights.

1   17.   (Unchanged)   An apparatus as defined in claim 10, wherein said input is a first input and

2   wherein said input signal is a first input signal, said apparatus further comprising:

3   a)   a second input for receiving a second input signal indicative of a data element

4   identifying the given speech element;

5   b)   a database of model groups comprising a plurality of model groups, each model

6   group being associated to a respective speech element, each model group comprising

7   two sets of speech models namely a first set having speech models of a first type and

8   a second set having speech models of a second type, each speech model of a first type

9   in said first set being associated to a speech model of the second type in the second

10   set;

11   said processing unit being further operative for extracting from said database of model groups

12   a certain model group associated to the data element received at said second input identifying the

13   given speech element.

1   18.   (Unchanged)   A computer readable medium comprising a data structure for storing a

2   plurality of model groups, each model group being associated to a respective speech element in a

3   phonetic alphabet, each model group comprising a plurality of speech models, each model group

4   being suitable for use by a processing device.

1   19.   (Unchanged)   A computer readable medium as defined in claim 18, wherein the given

2   speech element is indicative of a data element selected from the set consisting of phones, diphones,

3   syllables and words.

1   20.   (Unchanged)   A computer readable medium as defined in claim 19, wherein each model

2   group comprises two sets of speech models namely a first set having a plurality of speech models

3   of a first type and a second set having a plurality of speech models of a second type, each speech

4   model of a first type in said first set being associated to a speech model of the second type in the

5   second set, each speech model of the second type being indicative of a speech model having a higher

6   complexity that a speech model of the first type to which the speech model of the second type is

7   associated.

1   21.   (Unchanged)   A speech recognition system comprising:

2   -   an input for receiving an input signal indicative of a spoken utterance that is

3   indicative of at least one speech element;

4   -   a first processing unit coupled to said input operative for processing the input signal

5   to derive from a speech recognition dictionary at least one speech model associated

6   to a given speech element that constitutes a potential match to the at least one speech

7   element;

8   -   a second processing unit coupled to said first processing unit for generating a

9   modified version of the at least one speech model on the basis of the input signal;

10   -   a third processing unit coupled to said second processing unit for processing the input

11   signal on the basis of the modified version of the at least one speech model to

12   generate a recognition result indicative of whether the modified version of the at least

13   one speech model constitutes a match to the input signal;

14   -   an output for releasing a signal indicative of the recognition result.

1   22.   (Unchanged) A speech recognition system as defined in claim 21, wherein said first

2   processing unit is operative for generating a speaker specific speech model derived on the basis of

3   the input signal, the speaker specific speech model being indicative of the acoustic characteristics

4   of the least one speech element.

1   23.   (Unchanged) A speech recognition system as defined in claim 22, wherein said modified

2   version of the at least one speech model is indicative of a hybrid speech model associated to the

3   given speech element.

1   24.   (Unchanged) A speech recognition system as defined in claim 23, wherein said second

2   processing unit comprises:

3   -   coupling member for allowing data exchange between the first processing unit and

4   the second processing unit, said coupling member being suitable for receiving the

5   speaker specific speech model derived from the input signal;

6   -   a model group associated to the given speech element, said model group comprising

7   a plurality of speech models, each speech model of said plurality of speech models

8   being a different representation of the given speech element;

9   -   a functional unit coupled to the coupling member for processing the speaker specific

10   speech model and the model group to generate the hybrid speech model associated

11   to the given speech element, said hybrid speech model being a combination of speech

12   models in said plurality of speech models on the basis of the speaker specific speech

13   model;

14   -   an output coupling member for allowing data exchange between the second

15   processing unit and the third processing unit, said output coupling member being

16   suitable for releasing a signal indicative of the hybrid speech model associated to the

17   given speech element.

1   25.   (Unchanged) A speech recognition system as defined in claim 24, wherein said hybrid

2   speech model is weighted toward the speaker specific speech model.

1   26.   (Unchanged)   A speech recognition system as defined in claim 24, wherein said hybrid

2   speech model is derived by computing a linear combination of the speech models in said group of

3   speech models.

1   27.   (Unchanged)   A speech recognition system as defined in claim 24, wherein said coupling

2   member is a first coupling member, said second processing unit further comprising:

3   a)   a second coupling member for allowing data exchange between the first processing

4   unit and the second processing unit, said second coupling member being suitable for

5   receiving a data element identifying the given speech element;

6   b)   a database of model groups comprising a plurality of model groups, each model

7   group being associated to a respective speech element, each model group comprising

8   a set of speech models;

9   said functional unit being further operative for extracting from said database of model groups

10   a certain model group associated to the data element received at said second coupling member

11   identifying the given speech element.

1   28.   (Unchanged)   A speech recognition system as defined in claim 22, wherein said modified

2   version of the at least one speech model is indicative of a complex speech model associated to the

3   given speech element.

1   29.   (Unchanged)   A speech recognition system as defined in claim 28, wherein said second

2   processing unit comprises:

3   -   coupling member for allowing data exchange between the first processing unit and

4   the second processing unit, said coupling member being suitable for receiving the

5   speaker specific speech model derived from the input signal;

6   -   a model group associated to the given speech element, said model group comprising

7   a plurality of speech models, each speech model of said plurality of speech models

8   being a different representation of the given speech element, said model group

9   comprising two sets of speech models namely a first set having speech models of a

10   first type and a second set having speech models of a second type, each speech model

11   of a first type in said first set being associated to a speech model of the second type

12   in the second set;

13   -   a functional unit coupled to the coupling member for:

14   a)   processing the speaker specific speech model and the model group to

15   generate a hybrid speech model associated to the given speech element, said

16   hybrid speech model being a combination of speech models of the first type

17   in said plurality of speech models on the basis of the speaker specific speech

18   model;

19   b)   processing the hybrid speech model to generate a complex speech model

20   associated to the given speech element, said complex speech model being a

21 combination of speech models of the second type in said plurality of speech

22 models;

23 - an output coupling member for allowing data exchange between the second

24 processing unit and the third processing unit, said coupling member being suitable

25 for releasing a signal indicative of the complex speech model associated to the given

26 speech element.

1 30. (Unchanged) A speech recognition system as defined in claim 29, wherein any speech

2 model of the second type is indicative of a speech model having a higher complexity than a speech

3 model of the first type to which it is associated.

1 31. (Unchanged) A speech recognition system as defined in claim 30, wherein said hybrid

2 speech model is weighted toward the speaker specific speech model.

1 32. (Unchanged) A speech recognition system as defined in claim 31, wherein said hybrid

2 speech model is derived by computing a linear combination of the speech models of the first type.

1 33. (Unchanged) A speech recognition system as defined in claim 32, wherein said linear

2 combination is a first linear combination and is characterized by a first set of parameters indicative

3 of weights associated to speech models of the first type, said complex speech model being derived

4   by computing a second linear combination of the speech models of the second type, said second

5   linear combination being characterized by a second set of parameters indicative of weights associated

6   to speech models of the second type.

1   34.   (Unchanged) A speech recognition system as defined in claim 33, wherein said first set of

2   parameters and said second set of parameters is indicative of substantially the same weights.

1   35.   (Unchanged) An apparatus for generating a hybrid speech model associated to a given

2   speech element, said hybrid speech model being suitable for use by a speech recognition device

3   during speech recognition, said apparatus comprising:

4   -   means for receiving an input signal derived from a spoken utterance that contains at

5   least one speech element that potentially matches the given speech element;

6   -   a model group associated to the given speech element, said model group comprising

7   a plurality of speech models, each speech model of said plurality of speech models

8   being a different representation of the given speech element;

9   -   means for processing the input signal and the model group to generate a hybrid

10   speech model associated to the given speech element, said hybrid speech model being

11   a combination of speech models in said plurality of speech models on the basis of the

12   input signal derived from the spoken utterance;

13   -   means for releasing a signal indicative of said hybrid speech model associated to the

14   given speech element in a format suitable for use by a speech recognition device.

1   36.   (Unchanged)   A speech recognition system comprising:

2   -   means receiving an input signal indicative of a spoken utterance that is indicative of

3   at least one speech element;

4   -   means for processing the input signal to derive from a speech recognition dictionary

5   at least one speech model associated to a given speech element that constitutes a

6   potential match to the at least one speech element;

7   -   means for generating a modified version of the at least one speech model on the basis

8   of the input signal;

9   -   means for processing the input signal on the basis of the modified version of the at

10   least one speech model to generate a recognition result indicative of whether the

11   modified version of the at least one speech model constitutes a match to the input

12   signal;

13   -   means for releasing a signal indicative of the recognition result.